

WCCF
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meca

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alpha-1 mass storage system

FEATURES:

- Read/Write at 780 byte/second
- High speed search at 100 in./sec.
- Plug compatible with S-100 Bus
- Stores >500 KByte/Drive
- Second track free for audio use
- Flexible operating system with patches to MITS Basic
- Two button cold-starting of Altair
- Manual operation of drive functions
- Two separate write protect features
- Interface controls up to 4 Drives
- Phase-encoded format



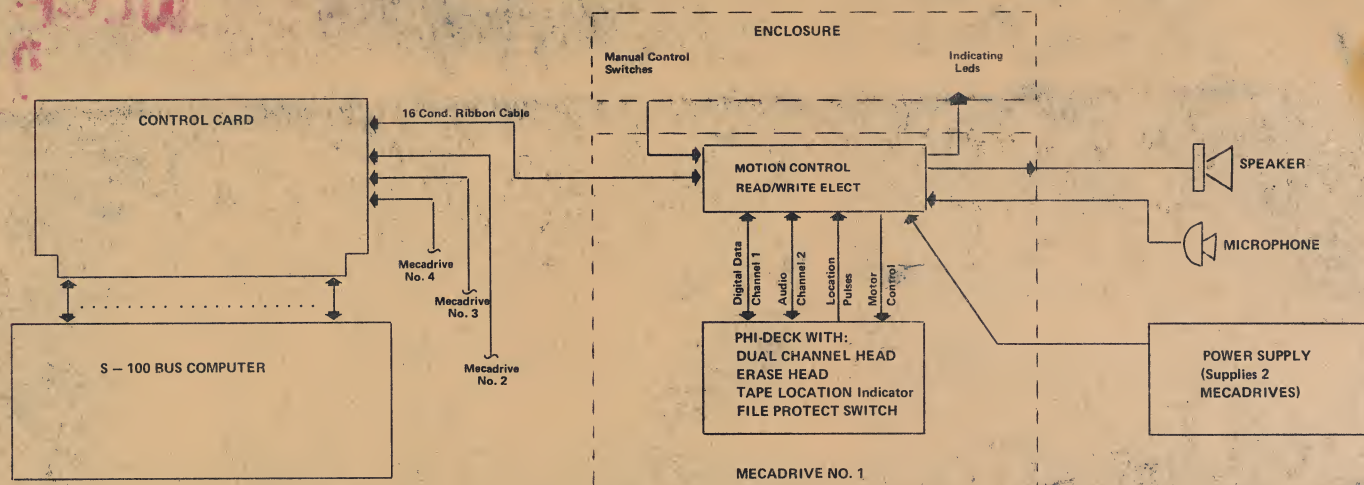
The ALPHA-1 System sets a new price / performance standard for mass storage systems. Starting at under \$400, the ALPHA-1 provides greater than 500,000 Bytes of storage on one side of a C-60 audio cassette with a data transfer rate of 6250 BAUD.

The ALPHA-1 System comes complete with a flexible operating system which can access any position on a C-30 cassette in under 20 seconds. The operating system provides file management functions in both fixed and variable record length formats. Software patches are available for MITS Basic.

Independent motion control and Read / Write electronics allow simplified tape copying, look ahead tape queuing, and flexible file management techniques.

With the ALPHA-1 System, you can cold start your Altair or IMSAI with no manual entry of memory information.

Innovative design provides an additional track for audio recording. This makes the ALPHA-1 System useful for instructional systems, talking games, audio burglary deterrent, intelligent telephone message system, etc.



ALPHA-1 SYSTEM – HARDWARE SPECIFICATIONS

CONFIGURATION: The ALPHA-1 System is composed of an S100 Bus compatible Control Card and up to 4 MECADRIVES.

DATA RATE: 6250 Bits/Sec. (781 Bytes/Sec.)

DATA FILE ACCESS TIME: Average — > 10 Seconds;
Worse Case ≈ Cassette Minutes x .6 Seconds.

ERROR PARAMETERS: 1) Soft error rate - 1 in 10^8
2) Hard error rate - 1 in 10^8
NOTE: This parameter is totally media dependent and is only meaningful if no read back check is performed.
3) Undetected errors: Virtually 0 with simple check sum error detection technique supplied.

POWER REQUIREMENTS (Dual Drive System):

1) From MITS/IMSAI Supplies

+8V @ .5 AMP

+16V @ .3 AMP

-16V @ .06 AMP

2) Booster Supply is included, which supplies the high current requirements of the Phi-Deck Motors.

MECADRIVE

- Each MECADRIVE has independent Read and Write Electronics. This makes possible simultaneous Drive Operation.
- Tape Motion Control: High Speed Search - 100 inches per second avg. Play/Record - 5 ips ± 3 percent
- Storage Capacity: > 500,000 Bytes Unformatted on one side of a C60 Cassette.
- Reliable location pulse output derived from an optical sensor on the forward tape reel. This allows high speed location of a given tape location to within 2 inches (~.4 seconds at play speed) with head retracted for maximum head/tape life.
- Tape transport is the new cast aluminum Phi-Deck.
- AC Biased Write for reliable trouble-free operation.
- AC Erase for minimum Peak Shift on Read.
- Additional Analog Channel allows unique audio-digital applications.
- "Foolproof" Write Disable Feature protects important tapes.
- Performs to specification using only high-grade audio tape such as Maxell UD or TDK Audia.
- Special outputs for driving status indicators (Write Mode, Write Protect and Ready Standard).
- Special manual control inputs for Fast Forward, Rewind, Play and Stop. (ALPHA-1 enclosure uses only Rewind and Stop).

CONTROL CARD

- Read/Write Data Rate: 6250 Bits/Second.
- Read/Write Format: Phase Encoding per ANSI Format.
- Special Bootstrap Circuits for 2 Button Cold Start with no ROMS. The sequence, after power is on, is EXTERNAL CLEAR and RUN. This unique circuitry uses the computer DMA feature.
- The Card has the capability of controlling up to 4 Drives (thus no changes are required as you upgrade your System).
- The Card is fully solder masked and silk screened.
- The Card has gold plated connector fingers on the 100 Pin Connector.
- Three Program Controlled Parallel Input Ports: FC, FD, FE (HEX).
- Two Program Controlled Output Ports: FC and FD (HEX).

ENCLOSURE

- Attractive sloping front design.
- LEDS indicate Write Protect, Write Mode, and Drive Activity
- Switch allows manual File Protect.
- All components mounted on top cover to speed assembly.
- Provision for DB-25 Connectors and Audio in/out.

ALPHA-1 SYSTEM SOFTWARE

The following software is included with the ALPHA-1 at no charge:

- Instructions for patches to MITS Basic to allow automatic (hands off) CSAVE and CLOAD along with a simple file directory update routine.
- Instructions for implementing patches which allow Basic to be bootstrapped in approximately 10 seconds (8K version).
- Assembler Language Drivers for all the Motion Control and Read/Write Functions of the System plus source code.
- Bootstrap Tape Generation Program.

The following software is available for a nominal charge:

- Variable Block Size Assembler Language Operating System which allows name file accessing of Program and Alphabetic Assembler Language Files.
- Fixed Block Size Data File Management System for maximum data density.
- Assemble from Tape Program which allows assembly and editing of programs which approach the size of your machine (available May, 1977).

MECA Cassette Operating System:

The MECA Cassette Operating System (MCOS) is a File Management System using named files (5 ALPHA characters). MCOS includes an editor, assembler, debug, directory recovery program as utility routines.

Some of the commands under MCOS are:

- LOAD fname — Loads the specified file.
- LDGO fname — Loads the specified file and transfers control to it.
- SAVE fname — Save; the file named on the unused portion at the end of the tape. A read-back check is performed as part of the SAVE operation.
- LIST — Lists the name, size, and location of all files on a tape.
- ASSM — Assembles the specified file.
- DELETE — Deletes the specified file from the directory.

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